I CLAIM:

1. A process for producing substantially pure pyrolytic carbon comprising:

providing inorganic particles having a surface area greater than about 10 m^2/g;

exposing the inorganic particles to a hydrocarbon gas; and

heating the inorganic particles and hydrocarbon gas for a time sufficient to deposit a substantially uniform layer of carbon on the particles.

2. The process of claim 1, wherein the surface area of the inorganic particles is greater than about 50m^2/g.

3. The process of claim 1, wherein the diameter of the inorganic particles is less than about 1 micron.

4. The process of claim 3, wherein the diameter of the inorganic particles is less than about 0.5 micron.

5. The process of claim 3, wherein the diameter of the inorganic particles is less than about 0.1 micron.

6. The process of claim 3, wherein the diameter of the inorganic particles is less than about 0.05 micron.

7. The process of claim 1, wherein the length of the refractory inorganic particles is from about 3 to about 5000 microns.

8. The process of claim 7, wherein the length of the refractory inorganic particles is from about 5 to about 2000 microns.

9. The process of claim 7, wherein the length of the refractory inorganic particles is from about 5 to about 300 microns.

10. The process of claim 1, wherein the layer of carbon is deposited to a thickness of at least about five times greater than the smallest dimension of the particles.

11. The process of claim 1, wherein the layer of carbon is deposited to a thickness of at least about ten times greater than the smallest dimension of the particles.

12. The process of claim 1, wherein the refractory inorganic particles are selected from the group consisting of carbon particles and ceramic particles.

13. The process of claim 12, wherein the refractory inorganic particles are carbon particles.

14. The process of claim 13, wherein the carbon particles are selected from the group consisting of powders, particulates, whiskers and flakes.

15. The process of claim 14, wherein the carbon particles are carbon whiskers.

16. The process of claim 15, wherein the carbon whiskers are vapor grown carbon whiskers.

17. The process of claim 15, wherein the carbon whiskers are carbonized polymeric nanofibers.

18. The process of claim 15, wherein the carbon whiskers have a diameter less than about 1 micron.

19. The process of claim 18, wherein the carbon whiskers have a diameter less than about 0.2 micron.

20. The process of claim 18, wherein the carbon whiskers have a diameter less than about 0.05 micron.

21. The process of claim 12, wherein the refractory inorganic particles are ceramic particles.

22. The process of claim 21, wherein the ceramic particles are selected from the group consisting of powders, particulates, whiskers and flakes.

23. The process of claim 22, wherein the ceramic particles are ceramic whiskers.

24. The process of claim 23, wherein the ceramic whiskers are selected from the group consisting of alumina, silica, silicon carbide, silicon nitride, titanium carbide, titanium nitride, zirconia, ceria and glass whiskers.

25. The process of claim 24, wherein the ceramic whiskers are silicon carbide.

26. The process of claim 1, wherein the hydrocarbon gas is selected from the group consisting of natural gas, methane, ethane, propane, butane, acetylene, ethylene, propylene, butylene, benzene, and mixtures thereof.

27. The process of claim 26, wherein the hydrocarbon gas is natural gas.

28. The process of claim 1, wherein the mixture is heated at a temperature in the range of from about 500°C to about 1700°C.

29. The process of claim 28, wherein the mixture is heated at a temperature in the range of from about 900°C to about 1200°C.

30. The process of claim 1, wherein the process is carried out in a process vessel selected from the group consisting of a fluidized bed process vessel, entrained flow process vessel and a packed bed process vessel.

31. The process of claim 30, wherein the process is carried out in a packed bed process vessel and the hydrocarbon gas is flowed through the packed bed.

32. A substantially pure bulk pyrolytic carbon produced by the process of claim 1.

33. The substantially pure pyrolytic carbon of claim 32, wherein said pyrolytic carbon has at least one dimension less than about 10 microns.

34. The substantially pure pyrolytic carbon of claim 33, wherein said pyrolytic carbon has at least one dimension less than about 3 microns.

35. The substantially pure pyrolytic carbon of claim 32, wherein said pyrolytic carbon has a microstructure selected from the group consisting of rough laminar, smooth laminar and isotropic microstructures.

36. The substantially pure pyrolytic carbon of claim 32, wherein said carbon is amorphous.

37. The substantially pure pyrolytic carbon of claim 32, wherein the pyrolytic carbon is 99 weight percent carbon.

38. The substantially pure pyrolytic carbon of claim 32, wherein the pyrolytic carbon is 95 weight percent carbon.

39. A substantially pure bulk pyrolytic carbon.

40. The substantially pure pyrolytic carbon of claim 39, wherein a particle of said pyrolytic carbon has at least one dimension less than about 10 microns.

41. The substantially pure pyrolytic carbon of claim 30, wherein a particle of said pyrolytic carbon has at least one dimension less than about 3 microns.

42. The substantially pure pyrolytic carbon of claim 39, wherein said pyrolytic carbon has a microstructure selected from the group consisting of rough laminar, smooth laminar and isotropic microstructures.

43. The substantially pure pyrolytic carbon of claim 39, wherein said carbon is amorphous.

44. A filler comprising the substantially pure pyrolytic carbon of claim 32.

45. A filler comprising the substantially pure pyrolytic carbon of claim 39.

46. A thermoplastic composition comprising the filler of claim 44.

47. A thermoplastic composition comprising the filler of claim 45.

48. An electrode comprising the filler of claim 44.

49. An electrode comprising the filler of claim 45.